

In the claims:

1. (Currently Amended) A local area network adapted to supply power to powered devices over a plurality of paths thus supplying high power, the local area network comprising:

at least one powered device;

a hub adapted for communicating data to and from said at least one powered device;

a communication cabling connecting said at least one powered device to said hub, said communication cabling comprising a first set of wire pairs utilized for communicating data between said at least one powered device and said hub and a second set of wire pairs different from said first set of wire pairs;

a first direct current power source adapted to supply and return a first direct current power over ~~at least a portion of~~ said first set of wire pairs;

a second direct current power source adapted to supply and return a second direct current power over ~~at least a portion of~~ said second set of wire pairs; and

a combiner operative ~~to~~ to:

receive said first power over said at least a portion of said first set of wire ~~pairs and to~~ pairs;

receive said second power over said at least a portion of said second set of wire ~~pairs; pairs, said combiner being further operative to~~

combine the current of said received first power and the current of said received second power to a combined high power ~~output~~ output; and

maintain a near even balance between the current of said received first power and the current of said received second power.

2. (Previously Presented) A local area network according to claim 1, wherein said combiner comprises a control circuit operative to sense the successful operation of said combiner, said control circuit supplying said combined high power output to said at least one powered device in response to said sensed successful operation of said combiner.

3. (Original) A local area network according to claim 2, wherein said control circuit is a controller.

4. (Previously Presented) A local area network according to claim 2, wherein said first power source and said second power source are associated with midspan power insertion equipment.
5. (Currently Amended) A local area network according to claim 4, wherein the output of said first power source is electrically isolated from the output of said second power source.
6. (Currently Amended) A local area network according to claim 4, wherein the output of said first power source is not electrically isolated from the output of said second power source.
7. (Cancelled)
8. (Cancelled)
9. (Original) A local area network according to claim 1, wherein said second set of wires are utilized for communicating data between said at least one powered device and said hub.
10. (Previously Presented) A local area network according to claim 1, wherein at least one of said first power source and said second power source are associated with midspan power insertion equipment.
11. (Previously Presented) A local area network according to claim 10, wherein said midspan power insertion equipment conforms to the IEEE 802.3af-2003 standard.
12. (Previously Presented) A local area network according to claim 1, wherein at least one of said first power source and said second power source are associated with said hub.
13. (Previously Presented) A local area network according to claim 12, wherein said at least one of said first power source and said second power source associated with said hub conforms to the IEEE 802.3af-2003 standard.

14. (Previously Presented) A local area network according to claim 1, wherein said first power source is associated with said hub, and said second power source is associated with midspan power insertion equipment.
15. (Previously Presented) A local area network according to claim 1, wherein said first power source and said second power source are associated with midspan power insertion equipment.
16. (Previously Presented) A local area network according to claim 1, wherein said first power source and said second power source are associated with said hub.
17. (Previously Presented) A local area network according to claim 1, wherein said hub adapted for communicating data to and from said at least one powered device operates according to at least one of 10 Base-T, 100 Base-T and 1000 Base-T.
18. (Currently Amended) A local area network according to claim 1, wherein said combiner is operative to transmit a signal to at least one of said first power source and said second power source, source that said signal indicating that said combiner is operative to produce said high power output.
19. (Currently Amended) A local area network according to claim 18, wherein said transmitted signal-operation comprises a change in the class identification.
20. (Original) A local area network according to claim 1, wherein said combined high power output is supplied to a load.
21. (Previously Presented) A local area network according to claim 20, wherein said load is operable in accordance with the IEEE 802.3af-2003 standard.
22. (Original) A local area network according to claim 20, wherein said load comprises at least one of: a wireless access point; a laptop computer; a desk top computer; a security camera having at least one of pan, tilt and zoom functionality; and an entrance control device.

23. (Original) A local area network according to claim 20, wherein said combiner is located within said load.

24. (Previously Presented) A local area network according to claim 20, wherein said load is operative in a low power mode and a high power mode responsive to said combiner.

25. (Previously Presented) A local area network according to claim 24, wherein said combiner is further operative to supply low power to said load for operation of said load in said low power mode in the absence of said combined high power.

26. (Previously Presented) A local area network according to claim 25, wherein said combiner is further operative to signal said load of said low power supply operation.

27. (Currently Amended) A combiner for use with a powered device having high power needs, the combiner comprising:

a first power input adapted to receive a first power signal over a first set of twisted wire pairs utilized to carry communication data;

a second power input adapted to receive a second power signal over a second set of twisted wire pairs different from said first set; and

a circuitry arranged to combine the current of said received first power signal with the current of said received second power signal to produce a combined high power signal; and

a control circuit operative to: maintain a near even balance between the current of said received first power and the current of said received second power;

sense said combined high power ~~signal~~ signal; and ~~and to~~

supply said combined high power signal to a powered device in response to said sensed combined high power signal.

28. (Previously Presented) A combiner according to claim 27, wherein said powered device is operable in accordance with the IEEE 802.3af-2003 standard.

29. (Original) A combiner according to claim 27, wherein said powered device comprises at least one of: a wireless access point; a laptop computer; a desk top computer; a security camera having at least one of pan, tilt and zoom functionality; and an entrance control device.

30. (Original) A combiner according to claim 27, wherein said combiner is located within said powered device.

31. (Original) A combiner according to claim 27, wherein said combiner is located outside of said powered device.

32. (Previously Presented) A combiner according to claim 27, wherein said combiner is operative in a low power mode in the absence of said sensed combined high power signal.

33. (Currently Amended) A combiner according to claim 27, wherein said control circuit is further operative to supply a low power signal to said ~~load~~ powered device for operation in a low power mode in the absence of said combined high power signal.

34. (Currently Amended) A combiner according to claim 33, wherein said control circuit is further operative to signal said ~~load~~ powered device of said low power mode.

35. (Original) A combiner according to claim 27, wherein said control circuit is a controller.

36. (Previously Presented) A combiner according to claim 27, wherein said circuitry arranged to combine comprises at least one DC/DC converter.

37. (Previously Presented) A combiner according to claim 27, wherein said circuitry arranged to combine comprises a first DC/DC converter associated with said first power input and a second DC/DC converter associated with said second power input.

38. (Original) A combiner according to claim 37, wherein said first DC/DC converter is connected in series with said second DC/DC converter.

39. (Original) A combiner according to claim 37, wherein said first DC/DC converter is connected in parallel with said second DC/DC converter.
40. (Previously Presented) A combiner according to claim 37, wherein said circuitry arranged to combine further comprises a first PWM/resonance controller associated with said first DC/DC converter and a second PWM/resonance controller associated with said second DC/DC converter.
41. (Previously Presented) A combiner according to claim 27, wherein said circuitry arranged to combine further comprises a transformer having a first primary associated with said first power input and a second primary associated with said second power input.
42. (Original) A combiner according to claim 41, wherein said transformer comprises a secondary associated with said combined high power.
43. (Currently Amended) A method of supplying power to a powered device comprising the steps of:
- a) receiving a first power signal over a first set of twisted wire pairs;
  - b) receiving a second power signal over a second set of twisted wire pairs different from said first set;
  - c) combining the current of said received first power signal and the current of said received second power signal into a combined high power output;
  - d) sensing the success of said combining of said received first power signal and said received second power signal; ~~and~~
  - e) enabling ~~a combined~~ said combined high power output ~~comprising said received first power signal and said received second power signal~~ in response to said ~~sensing~~; sensing; and
  - f) maintaining, in the event of said sensed success of said combining, a near even balance between the current of said received first power signal and the current of said second received power signal.
44. (Previously Presented) A method of supplying power to a powered device according to claim 43, further comprising the steps of:

f) sensing an unsuccessful combining of said received first power signal and said received second power signal;

g) comparing at least one of said first and said second received power signal to a reference; and

h) supplying low power from one of said received first power signal and said received second power signal in response to said comparing.

45. (Original) A method of supplying power to a powered device according to claim 44, further comprising the step of:

i) signaling the powered device of said supplied low power.

46. (Currently Amended) A method of supplying power to a powered device according to claim 43, further comprising the step of:

j) transmitting a signal to signaling at least one of the source of said received first power signal and the source of said received second power signal, said transmitted signal notifying said at least one of the source of said received first power signal and the source of said received second power signal of said combining.

47. (Currently Amended) A method of supplying power to a powered device according to claim 46, wherein ~~the step of signaling~~ said transmitting a signal comprises changing the classification.

48. (New) A local area network according to claim 1, wherein said combiner comprises:

a first current sensor arranged to sense the current component of said received first power;

a second current sensor arranged to sense the current component of said received second power; and

a current share circuit in communication with said first current sensor and said second sensor, said current share circuit being operative to maintain said near even balance.

49. (New) A local area network according to claim 1, wherein said current share circuit is implemented in a controller.

50. (New) A combiner according to claim 27, further comprising:
- a first current sensor arranged to sense the current component of said received first power;
  - a second current sensor arranged to sense the current component of said received second power; and
  - wherein said control circuit comprises a current share circuit in communication with said first current sensor and said second sensor, said current share circuit being operative to maintain said near even balance.